

REMARKS

Applicants acknowledge receipt of an Office Action dated October 28, 2002. In this response Applicants have amended claim 1. In addition, Applicants have added dependent claims 9-14. Support for these amendments may be found in the specification *inter alia* in Table 1 and Table 2 and in the paragraph bridging pages 17 and 18. Applicants submit that entry of these amendments after Final Rejection is proper since the amendments place the application in condition for allowance. Claims 9-14 depend from claim 1 and are directed the examples set forth in Tables 1 and 2 in the specification. Following entry of these amendments, claims 1-14 are pending in the application.

Reconsideration of the present application is respectfully requested in view of the foregoing amendments and the remarks which follow.

Rejections Under 35 U.S.C. §103

On page 2 of the Office Action, the PTO has rejected claims 1-4, 6 and 7 under 35 U.S.C. §103(a) as being unpatentable over Japanese Patent Publication 10-092796 to Imafuku *et al.* (hereafter "Imafuku") in view of Japanese Patent Publication 01-213910 to Ando (hereafter "Ando") and U.S. Patent 5,919,332 to Koshiishi *et al.* (hereafter "Koshiishi"). In addition, on page 4 of the Office Action, the PTO has rejected claims 5 and 8 under 35 U.S.C. §103(a) as being unpatentable over Imafuku in view of Ando and Koshiishi and further in view of U.S. Patent 6,149,730 to Matsubara *et al.* (hereafter "Matsubara"). Applicants respectfully traverse these rejections for the reasons set forth below.

In response to the PTO's acknowledgement that Table 1 and Table 2 in the specification "show data for average grain sizes of 21.7-40 μm , Ra of 1.1-2.2, and density of less than 4," Applicants have amended independent claim 1 to recite "**an average grain size of 21.7-40 μm , a surface roughness of 1.3-2.2 μm , and a bulk density of 3.90 g/cm³ or over but less than 4 g/cm³.**" Applicants have amended each of claim 1 solely to permit allowable subject matter to issue as a patent without further delay. Applicants expressly reserve the right pursue additional subject matter in further applications.

In both the present and the previous Office Action, the PTO has applied Imafuku as a primary reference, stating that Imafuku discloses a product “made of alumina and magnesia (MgO) and [that] has a purity of 99.9%, a bulk density of 3.98 g/cm³, and an average grain size of 10 to 100 micrometers.” In addition, the PTO has acknowledged that Imafuku does not teach surface roughness.

As set forth in MPEP §716.01, the PTO *must* consider comparative data in the specification. Further, as set forth in MPEP §716.02(e), Applicants need only compare their invention with the closest single prior art reference since requiring applicants to compare their invention to a combination of references would be requiring comparison of the results of the invention with the results of the invention. In the present application, Applicants have provided comparative data which has been summarized in Tables 1 and 2 on page 22 of the specification. Taking Imafuku, the primary reference applied by the PTO, as the closest prior art, Applicants discuss below the comparative data shown in the present specification as it relates to Imafuku.

The product of Comparative Example 1, as Imafuku, is made of alumina and magnesia (the Mg in Table 1 refers to MgO - see the first full paragraph on page 12), has a purity of 99.9%, has a bulk density of 3.98 g/cm³, and an average grain size 13 μm (within the 10 to 100 micrometer range of Imafuku). Imafuku includes no example that is closer than Comparative Example 1. **For Comparative Example 1, the discharge time before particles exceed the control value is 22 hours.**

The plasma resistant member of claim 1 of the present invention comprises “**an average grain size of 21.7-40 μm, a surface roughness of 1.3-2.2 μm, and a bulk density of 3.90 g/cm³ or over but less than 4 g/cm³.**” Example 1, shows data for an average grain size of 24 μm, a surface roughness of 1.3 μm, a bulk density of 3.99 g/cm³, all values within the ranges of claim 1. **In contrast to Comparative Example 1, the discharge time before particles exceed the control value for Example 1 is 80 hours.**

Thus, as shown by the discharge times for Example 1 and Comparative Example 1, the combination of parameters of claim 1, provides unexpected results as compared to an embodiment that is closer to the claimed invention than any embodiment in the closest single reference applied by the PTO.

In view of the objective evidence in the specification and the foregoing remarks, Applicants submit that claim 1, as well as claims 2-8 which depend therefrom, are non-obvious and respectfully request reconsideration and withdrawal of the outstanding rejection of these claims.

Newly Added Dependent Claims


In this response, Applicants have added claims 9-14. Applicants submit that these claims are allowable for the same reasons as claim 1. During a telephonic interview on January 28, 2003, Examiner Crowell indicated to the undersigned that entry of these new claims would be permissible after final rejection since these claims depend from claim 1 and since these claims reflect the examples set forth in Tables 1 and 2 in the specification.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that all of the pending claims are now in condition for allowance. An early notice to this effect is earnestly solicited. If there are any questions regarding the application, the Examiner is invited to contact the undersigned at the number below.

Respectfully submitted,

Date 1/28/03

By 

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MARKED UP VERSION SHOWING CHANGES MADE

Below are the marked up amended claim(s):

1. (Amended) A plasma-resistant member of the type which is employed in a reaction chamber of a plasma treating apparatus, characterized in that said member is formed of a dense alumina sintered product having an average grain size of **[18-45] 21.7 - 40 μm** , a surface roughness Ra of **[0.8 - 3.0] 1.3 - 2.2 μm** , and a bulk density of **3.90 g/cm³ or over but less than 4 g/cm³**.